

Query= SEQ ID NO:3  
(10,716 letters)

	Score	E
	(bits)	Value
AL158158.14.1.194835	<u>5531</u>	0.0
AL592463.10.1.96779	<u>1053</u>	0.0
AL354982.12.1.119077	<u>470</u>	e-129

>AL158158.14.1.194835  
Length = 194835

Score = 5531 bits (2790), Expect = 0.0  
Identities = 2793/2794 (99%)  
Strand = Plus / Minus

Query: 6647 agcataacaactggcaggatcttgagagtgaagtgaggtatcagtgtAACCCGGGCTATA 6706  
|||||  
Sbjct: 173266 agcataacaactggcaggatcttgagagtgaagtgaggtatcagtgtAACCCGGGCTATA 173207

Query: 6707 agtcagtcgaaagtccctgtattgtctgccaaggccatcgccactggcacagtgaatccc 6766  
|||||  
Sbjct: 173206 agtcagtcgaaagtccctgtattgtctgccaaggccatcgccactggcacagtgaatccc 173147

Query: 6767 ctctgatgtgtttccctctcgactgtggaaaacctccccatccagaatggcttcatga 6826  
|||||  
Sbjct: 173146 ctctgatgtgtttccctctcgactgtggaaaacctccccatccagaatggcttcatga 173087

Query: 6827 aaggagaaaaacttgaagttagggtccaagggttcagtttctgtaatgagggttatgac 6886  
|||||  
Sbjct: 173086 aaggagaaaaacttgaagttagggtccaagggttcagtttctgtaatgagggttatgac 173027

Query: 6887 ttgttggtacagttctggacatgtcagaaatctggcaaattggataagaagtcaatc 6946  
|||||  
Sbjct: 173026 ttgttggtacagttctggacatgtcagaaatctggcaaattggataagaagtcaatc 172967

Query: 6947 caaagtgcattgcctgccaagtgcggccatgtggaaaaccaggctgtattaa 7006  
|||||  
Sbjct: 172966 caaagtgcattgcctgccaagtgcggccatgtggaaaaccaggctgtattaa 172907

Query: 7007 aggagttgaccaccgaggttaggatgtgacatttctgtaaagaaggcatgtcctgc 7066  
|||||  
Sbjct: 172906 aggagttgaccaccgaggttaggatgtgacatttctgtaaagaaggcatgtcctgc 172847

Query: 7067 aaggccctctgtcctgaaatgtttccatcccagcaatgaaatgactcttccctgttt 7126  
|||||  
Sbjct: 172846 aaggccctctgtcctgaaatgtttccatcccagcaatgaaatgactcttccctgttt 172787

Query: 7127 gtaagattgttcttgcacccacccccataattccttgggtccccattccttctt 7186  
Sbjct: 172786 gtaagattgttcttgcacccacccccataattccttgggtccccattccttctt 172727

Query: 7187 ctgctttcatttggaaagtactgtcaagtattttgttaggtgggtttccataagag 7246  
Sbjct: 172726 ctgctttcatttggaaagtactgtcaagtattttgttaggtgggtttccataagag 172667

Query: 7247 gaaattctaccaccctctgccaacctgatggcacctggagcttcactgccagaatgtg 7306  
Sbjct: 172666 gaaattctaccaccctctgccaacctgatggcacctggagcttcactgccagaatgtg 172607

Query: 7307 ttccagtagaatgtccccaacctgaggaaatccccatggaatcattgtatgtcaaggcc 7366  
Sbjct: 172606 ttccagtagaatgtccccaacctgaggaaatccccatggaatcattgtatgtcaaggcc 172547

Query: 7367 ttgccttatctcagcacagctctatacctgcaagccaggcttgaattgggtggaaata 7426  
Sbjct: 172546 ttgccttatctcagcacagctctatacctgcaagccaggcttgaattgggtggaaata 172487

Query: 7427 ctaccacccttggagaaaatggtaactggcttggagaaaaccaacatgtaaagcca 7486  
Sbjct: 172486 ctaccacccttggagaaaatggtaactggcttggagaaaaccaacatgtaaagcca 172427

Query: 7487 ttgagtgcctgaaacccaaggagatttgaatggcaaattctttacacggacctacact 7546  
Sbjct: 172426 ttgagtgcctgaaacccaaggagatttgaatggcaaattctttacacggacctacact 172367

Query: 7547 atggacagaccgttacctactttgcaaccgaggcttcggctcgaaaggcccagtgcct 7606  
Sbjct: 172366 atggacagaccgttacctactttgcaaccgaggcttcggctcgaaaggcccagtgcct 172307

Query: 7607 tgacctgttagagacagaggtagtgattggatgttagatgccccatctgcaatgccatccact 7666  
Sbjct: 172306 tgacctgttagagacagaggtagtgattggatgttagatgccccatctgcaatgccatccact 172247

Query: 7667 gtgattccccacaacccattgaaaatggttttagaaggtagcagattacagctatggtg 7726  
Sbjct: 172246 gtgattccccacaacccattgaaaatggttttagaaggtagcagattacagctatggtg 172187

Query: 7727 ccataatcatctacagttgttccctgggtttcaggtggctggcatgccatgcagacct 7786  
Sbjct: 172186 ccataatcatctacagttgttccctgggtttcaggtggctggcatgccatgcagacct 172127

Query: 7787 gtgaagagtcaaggatggtaagttccatccaaacatgtatgccaatagactgtggcctcc 7846  
Sbjct: 172126 gtgaagagtcaaggatggtaagttccatccaaacatgtatgccaatagactgtggcctcc 172067

Query: 7847 ctcctcatatagatttggagactgtactaaactcaaagatgaccaggatatttgagc 7906  
Sbjct: 172066 ctcctcatatagatttggagactgtactaaactcaaagatgaccaggatatttgagc 172007

Query: 7907 aagaagacgacatgatggaagttccatatgtgactcctcaccccttattttggag 7966  
Sbjct: 172006 aagaagacgacatgatggaagttccatatgtgactcctcaccccttattttggag 171947

Query: 7967 cagtggctaaaacctggaaaatacaaaggagtctcctgctacacattcatcaaactttc 8026  
Sbjct: 171946 cagtggctaaaacctggaaaatacaaaggagtctcctgctacacattcatcaaactttc 171887

Query: 8027 tgtatggtaccatggttcatacacctgtaatccaggatatgaacttctgggaaccctg 8086  
Sbjct: 171886 tgtatggtaccatggttcatacacctgtaatccaggatatgaacttctgggaaccctg 171827

Query: 8087 tgctgatctgccaggaagatggaacttggatggcagtgcaccatcctgcatttcaattt 8146  
Sbjct: 171826 tgctgatctgccaggaagatggaacttggatggcagtgcaccatcctgcatttcaattt 171767

Query: 8147 aatgtgacttgcctactgtcctgaaaatggctttgcgtttacagagacttagcatgg 8206  
Sbjct: 171766 aatgtgacttgcctactgtcctgaaaatggctttgcgtttacagagacttagcatgg 171707

Query: 8207 gaagtgtgtgcagtatacgatgtaaacctggacacattctagcaggctctgacttaaggc 8266  
Sbjct: 171706 gaagtgtgtgcagtatacgatgtaaacctggacacattctagcaggctctgacttaaggc 171647

Query: 8267 tttgtctagagaatagaaagtggagtggatggcctccccacgctgtgaagccatttcatgca 8326  
Sbjct: 171646 tttgtctagagaatagaaagtggagtggatggcctccccacgctgtgaagccatttcatgca 171587

Query: 8327 aaaagccaaatccaggatgtaaacctggatccatcaaaggaaaggcaactacacatacctgagca 8386  
Sbjct: 171586 aaaagccaaatccaggatgtaaacctggatccatcaaaggaaaggcaactacacatacctgagca 171527

Query: 8387 cgttgtactatgagtgtgaccccgatgtgctgaatggcactgagaggagaacatgcc 8446  
Sbjct: 171526 cgttgtactatgagtgtgaccccgatgtgctgaatggcactgagaggagaacatgcc 171467

Query: 8447 aggatgacaaaaactggatgaggatgagccattgcattcctgtggactgcagttcac 8506  
Sbjct: 171466 aggatgacaaaaactggatgaggatgagccattgcattcctgtggactgcagttcac 171407

Query: 8507 ccccagtctcagccaatggccaggtgagaggagacgagtcacattccaaaaagagattg 8566  
Sbjct: 171406 ccccagtctcagccaatggccaggtgagaggagacgagtcacattccaaaaagagattg 171347

Query: 8567 aatacacttgcaatgaagggttcttgcttgaggagccaggagtccggtttgtcttgcca 8626  
Sbjct: 171346 aatacacttgcaatgaagggttcttgcttgaggagccaggagtccggtttgtcttgcca 171287

Query: 8627 atggaagttggagtggagccactcccactgtgtgcctgtcagatgtgccaccccgccac 8686  
Sbjct: 171286 atggaagttggagtggagccactcccactgtgtgcctgtcagatgtgccaccccgccac 171227

Query: 8687 aactggccaatgggtgacggaaggcctggactatggcttcatgaaggaaacattcc 8746  
Sbjct: 171226 aactggccaatgggtgacggaaggcctggactatggcttcatgaaggaaacattcc 171167

Query: 8747 actgtcatgagggtcacatcttgcacgggtctccaaaactcacctgtcagatggca 8806  
Sbjct: 171166 actgtcacgagggtcacatcttgcacgggtctccaaaactcacctgtcagatggca 171107

Query: 8807 actggatgcagagattcctctgttaaccagtcaactgtggacccctgaagatctt 8866  
Sbjct: 171106 actggatgcagagattcctctgttaaccagtcaactgtggacccctgaagatctt 171047

Query: 8867 cccatggttccataatggtttccattcatggggccatatacagtatcagtgt 8926  
Sbjct: 171046 cccatggttccataatggtttccattcatggggccatatacagtatcagtgt 170987

Query: 8927 ttccctggttataagctccatggaaattcatcaagaagggtgcctctccatggctccgt 8986  
Sbjct: 170986 ttccctggttataagctccatggaaattcatcaagaagggtgcctctccatggctccgt 170927

Query: 8987 gtggcagctcacccctgcctgcctgcagatgtccacaccagtaattgaatatggaa 9046  
Sbjct: 170926 gtggcagctcacccctgcctgcctgcagatgtccacaccagtaattgaatatggaa 170867

Query: 9047 ctgtcaatggacagatttgactgtggaaaggcagccggattcagtgcattcaaaggct 9106  
Sbjct: 170866 ctgtcaatggacagatttgactgtggaaaggcagccggattcagtgcattcaaaggct 170807

Query: 9107 tcaagctcctaggactttctgaaatcacctgtgaagccatggccagtggagctctgggt 9166  
Sbjct: 170806 tcaagctcctaggactttctgaaatcacctgtgaagccatggccagtggagctctgggt 170747

Query: 9167 tcccccaactgtgaacacacttcttgggtctttccaatgataccaaatgcgttcatca 9226  
Sbjct: 170746 tcccccaactgtgaacacacttcttgggtctttccaatgataccaaatgcgttcatca 170687

Query: 9227 gtgagaccagcttggaaaggaaaatgtgataacttacagctgcaggtctggatatgtca 9286  
Sbjct: 170686 gtgagaccagcttggaaaggaaaatgtgataacttacagctgcaggtctggatatgtca 170627

Query: 9287 tacaaggcagttcagatctgattgtacagagaaagggtatggagccagccttatccag 9346  
Sbjct: 170626 tacaaggcagttcagatctgattgtacagagaaagggtatggagccagccttatccag 170567

Query: 9347 tctgtgagccctgtcctgtgggtccccaccgtctgtcgccaatgcagtggcaactggag 9406  
Sbjct: 170566 tctgtgagccctgtcctgtgggtccccaccgtctgtcgccaatgcagtggcaactggag 170507

Query: 9407 aggcacacacatatgaaagtgaagtgaaactcag 9440  
Sbjct: 170506 aggcacacacatatgaaagtgaagtgaaactcag 170473

Score = 1336 bits (674), Expect = 0.0  
Identities = 674/674 (100%)  
Strand = Plus / Minus

Query: 5975 gctatactttgtggcttgacaccattgaatgcctggccacggcaagtggagtagaa 6034  
Sbjct: 176049 gctatactttgtggcttgacaccattgaatgcctggccacggcaagtggagtagaa 175990

Query: 6035 gtgaccagcagtgcctggctgttcctgtatgagccaccattgtggaccacgccttc 6094  
Sbjct: 175989 gtgaccagcagtgcctggctgttcctgtatgagccaccattgtggaccacgccttc 175930

Query: 6095 cagagactgccatcggtttggagacattgcattctactactgtctgtatggttaca 6154  
Sbjct: 175929 cagagactgccatcggtttggagacattgcattctactactgtctgtatggttaca 175870

Query: 6155 gcctagcagacaattccagcttctgtcaatgccagggcaagtgggtaccccagaag 6214  
Sbjct: 175869 gcctagcagacaattccagcttctgtcaatgccagggcaagtgggtaccccagaag 175810

Query: 6215 gtcaagacatccccgttatacgctcattctgtaaaaacccatcggttcata 6274  
|||||||  
Sbjct: 175809 gtcaagacatccccgttatacgctcattctgtaaaaacccatcggttcata 175750

Query: 6275 gcatcttggaatctgtgagcaaaggaaaattgcagctggctcagttgtgagcttaat 6334  
|||||||  
Sbjct: 175749 gcatcttggaatctgtgagcaaaggaaaattgcagctggctcagttgtgagcttaat 175690

Query: 6335 gcatggaaggcttgtactgaacacccatcagcaaagattgaatgtatgagaggtggcagt 6394  
|||||||  
Sbjct: 175689 gcatggaaggcttgtactgaacacccatcagcaaagattgaatgtatgagaggtggcagt 175630

Query: 6395 ggaaccctccccatgtccatccaggatgcatccctgtgcgggtggagagccaccaagca 6454  
|||||||  
Sbjct: 175629 ggaaccctccccatgtccatccaggatgcatccctgtgcgggtggagagccaccaagca 175570

Query: 6455 tcatgaatggctatgcaagtggatcaaactacagtttggagccatggcttacagct 6514  
|||||||  
Sbjct: 175569 tcatgaatggctatgcaagtggatcaaactacagtttggagccatggcttacagct 175510

Query: 6515 gcaacaagggttctacatcaaaggaaaagaagagcacctgcgaagccacagggcagt 6574  
|||||||  
Sbjct: 175509 gcaacaagggttctacatcaaaggaaaagaagagcacctgcgaagccacagggcagt 175450

Query: 6575 ggagtagtcctataccgacgtgccacccgtatcttgtggtaaccacctaagggtgaga 6634  
|||||||  
Sbjct: 175449 ggagtagtcctataccgacgtgccacccgtatcttgtggtaaccacctaagggtgaga 175390

Query: 6635 atggcttctggag 6648  
|||||||  
Sbjct: 175389 atggcttctggag 175376

Score = 446 bits (225), Expect = e-121  
Identities = 228/229 (99%)  
Strand = Plus / Minus

Query: 9438 cagatgtctggaaagggtatacgatggatacagatacagatacattcacctgtcagaaaga 9497  
|||||||  
Sbjct: 168868 cagatgtctggaaagggtatacgatggatacagatacagatacattcacctgtcagaaaga 168809

Query: 9498 tggtcgtggccctgagagaatctcctgcagtcctaaaaatgtcctctccggaaaa 9557  
|||||||  
Sbjct: 168808 tggtcgtggccctgagagaatctcctgcagtcctaaaaatgtcctctccggaaaa 168749

Query: 9558 cataaacatataacttgttcatggggacgattcagtgtgaataggcaagttctgtgtc 9617  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 168748 cataaacatataacttgtacatggggacgattcagtgtgaataggcaagttctgtgtc 168689

Query: 9618 atgtgcagaagggtataccttgaggagttacatcatcagtatgtcag 9666  
||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 168688 atgtgcagaagggtataccttgaggagttacatcatcagtatgtcag 168640

Score = 387 bits (195), Expect = e-103  
Identities = 195/195 (100%)  
Strand = Plus / Minus

Query: 5613 taggtgtataaaaggatatactctggccgggtgataaagaatcatcctgtcttgcataacag 5672  
||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 193649 taggtgtataaaaggatatactctggccgggtgataaagaatcatcctgtcttgcataacag 193590

Query: 5673 ttcttggagtcattcccctcctgtgtgaaccagtgaagtgttctagtccggaaaatat 5732  
||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 193589 ttcttggagtcattcccctcctgtgtgaaccagtgaagtgttctagtccggaaaatat 193530

Query: 5733 aaataatggaaaatatatttgagtggcttacctaccttctactgcatcatattcatg 5792  
||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 193529 aaataatggaaaatatatttgagtggcttacctaccttctactgcatcatattcatg 193470

Query: 5793 cgatacaggatacag 5807  
||| ||| ||| |||  
Sbjct: 193469 cgatacaggatacag 193455

Score = 355 bits (179), Expect = 4e-94  
Identities = 179/179 (100%)  
Strand = Plus / Minus

Query: 5352 agaacctataaaatgttaaggctccaggaaatccggaaaatggccactcctcaggtgagat 5411  
||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 194762 agaacctataaaatgttaaggctccaggaaatccggaaaatggccactcctcaggtgagat 194703

Query: 5412 ttatacagtaggtgccgcagtcacatttcggtcaggaaggataccagttgatggagat 5471  
||| ||| ||| ||| ||| ||| |||  
Sbjct: 194702 ttatacagtaggtgccgcagtcacatttcggtcaggaaggataccagttgatggagat 194643

Query: 5472 aacccaaaatcacatgttggagtctggagaatggaatcatctaataccatattgtaaag 5530  
||| ||| ||| ||| ||| ||| |||  
Sbjct: 194642 aacccaaaatcacatgttggagtctggagaatggaatcatctaataccatattgtaaag 194584

Score = 351 bits (177), Expect = 6e-93  
Identities = 177/177 (100%)  
Strand = Plus / Minus

Query: 10061 caaatccatgcctgttcctttgtgattcccgagaatgctctgctgtctgaaaaggagt 10120  
|||||||  
Sbjct: 150387 caaatccatgcctgttcctttgtgattcccgagaatgctctgctgtctgaaaaggagt 150328

Query: 10121 tttatgttcatcagaatgtgtccatcaaatgttaggaaagggtttctgctgcagggccacg 10180  
|||||||  
Sbjct: 150327 tttatgttcatcagaatgtgtccatcaaatgttaggaaagggtttctgctgcagggccacg 150268

Query: 10181 gcatcattacctgcaaccccgacgagacgtggacacagacaagcgccaaatgtgaaa 10237  
|||||||  
Sbjct: 150267 gcatcattacctgcaaccccgacgagacgtggacacagacaagcgccaaatgtgaaa 150211

Score = 349 bits (176), Expect = 2e-92  
Identities = 176/176 (100%)  
Strand = Plus / Minus

Query: 9885 agagaccaggtgtgaaactccacttgaatttctcaatggaaagctgacattgaaaacag 9944  
|||||||  
Sbjct: 151773 agagaccaggtgtgaaactccacttgaatttctcaatggaaagctgacattgaaaacag 151714

Query: 9945 gacgactggacccaacgtggtatattcctgcaacagaggctacagtcttgaagggccatc 10004  
|||||||  
Sbjct: 151713 gacgactggacccaacgtggtatattcctgcaacagaggctacagtcttgaagggccatc 151654

Query: 10005 tgaggcacactgcacagaaaatggAACCTGGAGGCCACCCAGTCCCTCTGCAAAC 10060  
|||||||  
Sbjct: 151653 tgaggcacactgcacagaaaatggAACCTGGAGGCCACCCAGTCCCTCTGCAAAC 151598

Score = 339 bits (171), Expect = 2e-89  
Identities = 171/171 (100%)  
Strand = Plus / Minus

Query: 5805 cagttacaggcccatttgcacatgcacggcttctggcatctggacagagcgcc 5864  
|||||||  
Sbjct: 192074 cagttacaggcccatttgcacatgcacggcttctggcatctggacagagcgcc 192015

Query: 5865 acctgcctgtcacctcgctttctgtggagaaccacacctgccccatcaaagatgtgtcattac 5924  
|||||||  
Sbjct: 192014 acctgcctgtcacctcgctttctgtggagaaccacacctgccccatcaaagatgtgtcattac 191955

Query: 5925 ggggaataacttcactttcaggaacaccgtcacttacactgcaaagaagg 5975  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 191954 ggggaataacttcactttcaggaacaccgtcacttacactgcaaagaagg 191904

Score = 339 bits (171), Expect = 2e-89  
Identities = 171/171 (100%)  
Strand = Plus / Minus

Query: 10238 aaatctcatgtggtccaccagctcacgtagaaaatgcaattgctcgaggcgtacattatc 10297  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 143830 aaatctcatgtggtccaccagctcacgtagaaaatgcaattgctcgaggcgtacattatc 143771

Query: 10298 aatatggagacatgatcacctactcatgttacagtggatacatgttgagggttcctga 10357  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 143770 aatatggagacatgatcacctactcatgttacagtggatacatgttgagggttcctga 143711

Query: 10358 ggagtgtttgttagaaaatggaacatggacatcacccctattgcagag 10408  
||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 143710 ggagtgtttgttagaaaatggaacatggacatcacccctattgcagag 143660

Score = 315 bits (159), Expect = 3e-82  
Identities = 159/159 (100%)  
Strand = Plus / Minus

Query: 9665 agtttatggAACCTGGAGCCACCATCTCCATGAATCTGCAGTCCAGTTCTGTG 9724  
||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 165324 agtttatggAACCTGGAGCCACCATCTCCATGAATCTGCAGTCCAGTTCTGTG 165265

Query: 9725 ggaaacctgaaagtccagaacatggatttgtggcagtaatacaccccttcaaagca 9784  
||| ||| ||| ||| ||| ||| |||  
Sbjct: 165264 ggaaacctgaaagtccagaacatggatttgtggcagtaatacaccccttcaaagca 165205

Query: 9785 caattatTTATCAGTGTGAGCCTGGCTATGAACTAGAGG 9823  
||| ||| ||| ||| ||| |||  
Sbjct: 165204 caattatTTATCAGTGTGAGCCTGGCTATGAACTAGAGG 165166

Score = 194 bits (98), Expect = 8e-46  
Identities = 98/98 (100%)  
Strand = Plus / Minus

Query: 10407 agctgtctgtcgatttccatgtcagaatggggcatctgccaacgccaaatgcttgttc 10466  
||| ||| ||| ||| ||| ||| |||  
Sbjct: 141681 agctgtctgtcgatttccatgtcagaatggggcatctgccaacgccaaatgcttgttc 141622

```
Query: 10467 ctgtccagaggctggatggggcgccctgtgaagaac 10504
||| | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 141621 ctgtccagaggctggatggggcgccctgtgaagaac 141584
```

Score = 194 bits (98), Expect = 8e-46  
Identities = 98/98 (100%)  
Strand = Plus / Minus

```
Query: 10598 cagctttgccagtctccctgcttaatggtgaaaaatgtgtaaagaccaaaccgatgtc 10657
||| | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 134332 cagctttgccagtctccctgcttaatggtgaaaaatgtgtaaagaccaaaccgatgtc 134273
```

```
Query: 10658 actgtcttcttcttggacgggacataactgttccagg 10695
||| | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 134272 actgtcttcttggacgggacataactgttccagg 134235
```

Score = 190 bits (96), Expect = 1e-44  
Identities = 96/96 (100%)  
Strand = Plus / Minus

```
Query: 10505 caatctgcattttccctgtctgaacggaggcgctgtgtggcccttaccagtgtgact 10564
||| | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 139776 caatctgcattttccctgtctgaacggaggcgctgtgtggcccttaccagtgtgact 139717
```

```
Query: 10565 gccccctggctggacggggctcgctgtcatacag 10600
||| | | | | | | | | | | | | | | | | | | | | |
Sbjct: 139716 gccccctggctggacggggctcgctgtcatacag 139681
```

Score = 180 bits (91), Expect = 1e-41  
Identities = 94/95 (98%)  
Strand = Plus / Minus

```
Query: 5523 ttgttaagctgtttcatgtggtaaacggctattccagaaaatggttgcattgaggagtt 5582
||| | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 194323 ttgttaagctgtttcatgtggtaaacggctattccagaaaatggttgcattgaggagtt 194264
```

```
Query: 5583 agcatttactttggcagcaaagtgacatataagg 5617
||| | | | | | | | | | | | | | | | | | | |
Sbjct: 194263 agcatttactttggcagcaaagtgacatataagg 194229
```

Score = 131 bits (66), Expect = 1e-26  
Identities = 66/66 (100%)  
Strand = Plus / Minus

Query: 9821 aggggaacaggaaacgtgtctgccaggagaacagacagtggagtgagggggtggcaat 9880  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 153902 aggggaacaggaaacgtgtctgccaggagaacagacagtggagtgagggggtggcaat 153843

Query: 9881 gcaaag 9886  
||| |||  
Sbjct: 153842 gcaaag 153837

Score = 56.0 bits (28), Expect = 5e-04  
Identities = 28/28 (100%)  
Strand = Plus / Minus

Query: 10689 ttccaggaaaaggaggactgggaaaa 10716  
||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 130879 ttccaggaaaaggaggactgggaaaa 130852

>AL592463.10.1.96779  
Length = 96779

Score = 1053 bits (531), Expect = 0.0  
Identities = 531/531 (100%)  
Strand = Plus / Minus

Query: 1 atgtggcctcgccctggcctttgttgcgtgggtctggcgctcgttcggctggcgacc 60  
||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 33941 atgtggcctcgccctggcctttgttgcgtgggtctggcgctcgttcggctggcgacc 33882

Query: 61 tttcagcagatgtccccgtcgcaatttcagctccgcctttccccgagaccgcgccc 120  
||| ||| ||| ||| ||| ||| |||  
Sbjct: 33881 tttcagcagatgtccccgtcgcaatttcagctccgcctttccccgagaccgcgccc 33822

Query: 121 ggggccccccgggagtatccccgcgcggccgctcctggcgacgaagcggcgaaaa 180  
||| ||| ||| ||| ||| ||| |||  
Sbjct: 33821 ggggccccccgggagtatccccgcgcggccgctcctggcgacgaagcggcgaaaa 33762

Query: 181 gtggagcggctgggcccaggcggtccggcgacgcgtgcggctgcggagctcagcgag 240  
||| ||| ||| ||| ||| ||| |||  
Sbjct: 33761 gtggagcggctgggcccaggcggtccggcgacgcgtgcggctgcggagctcagcgag 33702

Query: 241 cgcctggagttgtcttcctggatgattcgccaggcgtaactccgc 300  
Sbjct: 33701 cgcctggagttgtcttcctggatgattcgccaggcgtaactccgc 33642

Query: 301 agcgagctcatgttgcgtccgcaagctgtccgacttccccgtggtgcacggccacg 360  
Sbjct: 33641 agcgagctcatgttgcgtccgcaagctgtccgacttccccgtggtgcacggccacg 33582

Query: 361 cgcgtggccatcgtgaccttctcgccaagaactacgtggtgcgcgtcgattacatc 420  
Sbjct: 33581 cgcgtggccatcgtgaccttctcgccaagaactacgtggtgcgcgtcgattacatc 33522

Query: 421 tccacccggcgcgccaggcacaagtgcgcgtgtccctccaagagatccctgccatc 480  
Sbjct: 33521 tccacccggcgcgccaggcacaagtgcgcgtgtccctccaagagatccctgccatc 33462

Query: 481 tcctaccgaggtggcgccacctacaccaaggcgcccttccagcaagcccg 531  
Sbjct: 33461 tcctaccgaggtggcgccacctacaccaaggcgcccttccagcaagcccg 33411

Score = 509 bits (257), Expect = e-140  
Identities = 257/257 (100%)  
Strand = Plus / Minus

Query: 531 gcaaattttttcatgttagaaaaactcaacaaaagtgtatttctcatcactgtatgg 590  
Sbjct: 4503 gcaaattttttcatgttagaaaaactcaacaaaagtgtatttctcatcactgtatgg 4444

Query: 591 atattccaatggggagaccctagaccaattgcagcgtcactgcgagattcaggagtgg 650  
Sbjct: 4443 atattccaatggggagaccctagaccaattgcagcgtcactgcgagattcaggagtgg 4384

Query: 651 gatttcaactttggcatatggcaaggaaacattcgagagctgaatgacatggcttccac 710  
Sbjct: 4383 gatttcaactttggcatatggcaaggaaacattcgagagctgaatgacatggcttccac 4324

Query: 711 cccaaaggaggaggactgttacctgctacacagttgaagaatttggggctttagctcg 770  
Sbjct: 4323 cccaaaggaggaggactgttacctgctacacagttgaagaatttggggctttagctcg 4264

Query: 771 ccgggcattgcatgaag 787  
Sbjct: 4263 ccgggcattgcatgaag 4247

Score = 355 bits (179), Expect = 4e-94  
Identities = 179/179 (100%)  
Strand = Plus / Minus

Query: 786 agatctacccctggagtttattcaagatgatatggccactgctcatatcttgtga 845  
|||||||  
Sbjct: 691 agatctacccctggagtttattcaagatgatatggccactgctcatatcttgtga 632

Query: 846 tgaaggcaaggactgtgtgaccgaatggaaagctgcaaatgtggacacacacaggcca 905  
|||||||  
Sbjct: 631 tgaaggcaaggactgtgtgaccgaatggaaagctgcaaatgtggacacacacaggcca 572

Query: 906 tttttagtgcattgtgaaaagggttattacggaaaggctgcgttatgaatgcacag 964  
|||||||  
Sbjct: 571 tttttagtgcattgtgaaaagggttattacggaaaggctgcgttatgaatgcacag 513

>AL354982.12.1.119077  
Length = 119077

Score = 470 bits (237), Expect = e-129  
Identities = 237/237 (100%)  
Strand = Plus / Minus

Query: 2762 cagctagtgtgccattaccgatgaaagaaatgatacccttgaatggaaaatcagcaac 2821  
|||||||  
Sbjct: 43075 cagctagtgtgccattaccgatgaaagaaatgatacccttgaatggaaaatcagcaac 43016

Query: 2822 gactccttcagacattggaaactatcacaaataaactgaaaaggactctcaacaaagacc 2881  
|||||||  
Sbjct: 43015 gactccttcagacattggaaactatcacaaataaactgaaaaggactctcaacaaagacc 42956

Query: 2882 ccatgtattccttcagctgcatcagaataacttatacgccacagcaattcattagaaa 2941  
|||||||  
Sbjct: 42955 ccatgtattccttcagctgcatcagaataacttatacgccacagcaattcattagaaa 42896

Query: 2942 caaaaaaggctcccccttgcagaccaggctcagtgctgagagggcgtatgttg 2998  
|||||||  
Sbjct: 42895 caaaaaaggctcccccttgcagaccaggctcagtgctgagagggcgtatgttg 42839

Score = 406 bits (205), Expect = e-109  
Identities = 205/205 (100%)  
Strand = Plus / Minus

Query: 4259 cagaacagtctacaggcttaacctggatttgaagttctggcatctatggatatgtca 4318  
|||||||  
Sbjct: 17516 cagaacagtctacaggcttaacctggatttgaagttctggcatctatggatatgtca 17457

Query: 4319 tgcttagatggcatgctccatctctccatgctctaaccctgtaccttctggatgaaatcct 4378  
|||||||  
Sbjct: 17456 tgcttagatggcatgctccatctctccatgctctaaccctgtaccttctggatgaaatcct 17397

Query: 4379 ctgacgacatgaactatggaacaccaatctcctatgcagttgataacggcagcgacaata 4438  
|||||||  
Sbjct: 17396 ctgacgacatgaactatggaacaccaatctcctatgcagttgataacggcagcgacaata 17337

Query: 4439 ccttgctcctgactgattataacgg 4463  
|||||||  
Sbjct: 17336 ccttgctcctgactgattataacgg 17312

Score = 404 bits (204), Expect = e-109  
Identities = 204/204 (100%)  
Strand = Plus / Minus

Query: 3900 aggcctgcattgtgaaacagaagtcaatgaatgccagtc aaacccatgcttaataatgc 3959  
|||||||  
Sbjct: 21737 aggcctgcattgtgaaacagaagtcaatgaatgccagtc aaacccatgcttaataatgc 21678

Query: 3960 agtctgtgaagaccaggttggggattcttgtcaa atgcccacctggattttgggtac 4019  
|||||||  
Sbjct: 21677 agtctgtgaagaccaggttggggattcttgtcaa atgcccacctggattttgggtac 21618

Query: 4020 ccgatgtggaaagaacgtcgatgagtgtctcagtc agccatgcaaaaatggagctacctg 4079  
|||||||  
Sbjct: 21617 ccgatgtggaaagaacgtcgatgagtgtctcagtc agccatgcaaaaatggagctacctg 21558

Query: 4080 taaagacggtgccaatagcttcag 4103  
|||||||  
Sbjct: 21557 taaagacggtgccaatagcttcag 21534

Score = 394 bits (199), Expect = e-106  
Identities = 199/199 (100%)  
Strand = Plus / Minus

Query: 1483 gagcgccactgttccaccttcagatgccaaagatgtcatcatatcccccaactgt 1542  
|||||||  
Sbjct: 70714 gagcgccactgttccaccttcagatgccaaagatgtcatcatatcccccaactgt 70655

Query: 1543 ggcaaggcagccagccaaattgggacgatctgctatgttaagttgcgc当地 1602  
|||||||  
Sbjct: 70654 ggcaaggcagccagccaaattgggacgatctgctatgttaagttgcgc当地 70595

Query: 1603 ttatctggagtcaaagaaatgctgagatgtaccacttctggaaaatggaatgtcgagtt 1662  
|||||||  
Sbjct: 70594 ttatctggagtcaaagaaatgctgagatgtaccacttctggaaaatggaatgtcgagtt 70535

Query: 1663 caggcagctgtgtaaag 1681  
|||||||  
Sbjct: 70534 caggcagctgtgtaaag 70516

Score = 391 bits (197), Expect = e-105  
Identities = 197/197 (100%)  
Strand = Plus / Minus

Query: 2169 aggttccctgtgaaattccattcacacctgtaaatgggatttatgcactccaga 2228  
|||||||  
Sbjct: 52913 aggttccctgtgaaattccattcacacctgtaaatgggatttatgcactccaga 52854

Query: 2229 taatactggagtcaactgtacattaacttgcttggaggctatgattcacagaaggc 2288  
|||||||  
Sbjct: 52853 taatactggagtcaactgtacattaacttgcttggaggctatgattcacagaaggc 52794

Query: 2289 tactgacaagtattattgtgcttatgaagatggcgtctggaaaccaacatataccactga 2348  
|||||||  
Sbjct: 52793 tactgacaagtattattgtgcttatgaagatggcgtctggaaaccaacatataccactga 52734

Query: 2349 atggccagactgtgcca 2365  
|||||||  
Sbjct: 52733 atggccagactgtgcca 52717

Score = 387 bits (195), Expect = e-103  
Identities = 195/195 (100%)  
Strand = Plus / Minus

Query: 5613 taggtgtataaaaggatatactctggccgggtataaagaatcatcctgtcttgctaacag 5672  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 812 taggtgtataaaaggatatactctggccgggtataaagaatcatcctgtcttgctaacag 753

Query: 5673 ttcttggagtcatccccctctgtgtgaaccagtgaagtgttctagtcggaaaatat 5732  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 752 ttcttggagtcatccccctctgtgtgaaccagtgaagtgttctagtcggaaaatat 693

Query: 5733 aaataatggaaaatatattttagtgggcttacctacccctactgcacatattcatg 5792  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 692 aaataatggaaaatatattttagtgggcttacctacccctactgcacatattcatg 633

Query: 5793 cgatacaggatacag 5807  
||| ||| ||| |||  
Sbjct: 632 cgatacaggatacag 618

Score = 361 bits (182), Expect = 6e-96  
Identities = 182/182 (100%)  
Strand = Plus / Minus

Query: 1302 agtaagaacatgtcctcatctccgccagccgaaacatggccacatcagctgttctacaag 1361  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 74694 agtaagaacatgtcctcatctccgccagccgaaacatggccacatcagctgttctacaag 74635

Query: 1362 ggaaatgttatataagacaacatgtttgggtgcctgtatgaagggtacagactagaagg 1421  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 74634 ggaaatgttatataagacaacatgtttgggtgcctgtatgaagggtacagactagaagg 74575

Query: 1422 cagtgataagcttacttgtcaaggaaacagccagtggtatggccagaacccgggtgt 1481  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 74574 cagtgataagcttacttgtcaaggaaacagccagtggtatggccagaacccgggtgt 74515

Query: 1482 gg 1483  
||  
Sbjct: 74514 gg 74513

Score = 357 bits (180), Expect = 9e-95  
Identities = 180/180 (100%)  
Strand = Plus / Minus

Query: 1124 ttgtccactgccctgcctgaaggcctcccggaaaatggttactttatccaaaacacttgca 1183  
Sbjct: 84580 ttgtccactgccctgcctgaaggcctcccggaaaatggttactttatccaaaacacttgca 84521

Query: 1184 acaaccacttcaatgcagcctgtgggtccgatgtcaccctggattgatcttgtggaa 1243  
Sbjct: 84520 acaaccacttcaatgcagcctgtgggtccgatgtcaccctggattgatcttgtggaa 84461

Query: 1244 gcagcatcatcttatgtctacccaatggttgtggccggttcagagagctactgcagag 1303  
Sbjct: 84460 gcagcatcatcttatgtctacccaatggttgtggccggttcagagagctactgcagag 84401

Score = 355 bits (179), Expect = 4e-94  
Identities = 179/179 (100%)  
Strand = Plus / Minus

Query: 786 agatctacttctggagtttattcaagatgatatggccactgctcatatcttgtga 845  
Sbjct: 117768 agatctacttctggagtttattcaagatgatatggccactgctcatatcttgtga 117709

Query: 846 tgaaggcaaggactgctgtgaccgaatgggaagctgcaaatgtggacacacacaggcca 905  
Sbjct: 117708 tgaaggcaaggactgctgtgaccgaatgggaagctgcaaatgtggacacacacaggcca 117649

Query: 906 tttttagtgcattgtgaaaagggttattacggaaaggctgcagtatgaatgcacag 964  
Sbjct: 117648 tttttagtgcattgtgaaaagggttattacggaaaggctgcagtatgaatgcacag 117590

Score = 355 bits (179), Expect = 4e-94  
Identities = 179/179 (100%)  
Strand = Plus / Minus

Query: 4463 gctgggttcttatgtgaatggcaggaaaagataacaaactgtccctcggtgaatgatg 4522  
Sbjct: 15196 gctgggttcttatgtgaatggcaggaaaagataacaaactgtccctcggtgaatgatg 15137

Query: 4523 gcagatggcatcatattgcaatcacttggacaagtgcacatggcatctggaaagtctata 4582  
Sbjct: 15136 gcagatggcatcatattgcaatcacttggacaagtgcacatggcatctggaaagtctata 15077

Query: 4583 tcgatggaaattatctgacgggtggctggcctctgttggttgcacatcggt 4641  
Sbjct: 15076 tcgatggaaattatctgacgggtggctggcctctgttggttgcacatcggt 15018

Score = 347 bits (175), Expect = 9e-92  
Identities = 178/179 (99%)  
Strand = Plus / Minus

Query: 5352 agaacctataaaatgttaaggctccagggaaatccggaaaatggccactcctcaggtgagat 5411  
Sbjct: 1927 agaacctataaaatgttaaggctccagggaaatccggaaaatggccactcctcaggtgagat 1868

Query: 5412 ttatacagtaggtgccgcagtcacatttcgtgtcaggaaggataccagttgtggagt 5471  
Sbjct: 1867 ttatacagtaggtgccgaagtcacatttcgtgtcaggaaggataccagttgtggagt 1808

Query: 5472 aaccaaaatcacatgtttggagtctggagaatggaatcatctaataccatattgtaaag 5530  
Sbjct: 1807 aaccaaaatcacatgtttggagtctggagaatggaatcatctaataccatattgtaaag 1749

Score = 345 bits (174), Expect = 4e-91  
Identities = 174/174 (100%)  
Strand = Plus / Minus

Query: 5060 gcattagctgtgggtgccacccctttggagaatggcttcattcagccatgtacttct 5119  
Sbjct: 4110 gcattagctgtgggtgccacccctttggagaatggcttcattcagccatgtacttct 4051

Query: 5120 atgctggcagcacagtaacaccgtcaacaatggctactatctattgggtgactcaa 5179  
Sbjct: 4050 atgctggcagcacagtaacaccgtcaacaatggctactatctattgggtgactcaa 3991

Query: 5180 ggatgttctgtacagataatggagctggAACGGCGTTcaccatcctgccttg 5233  
Sbjct: 3990 ggatgttctgtacagataatggagctggAACGGCGTTcaccatcctgccttg 3937

Score = 343 bits (173), Expect = 1e-90  
Identities = 173/173 (100%)  
Strand = Plus / Minus

Query: 4888 gattgccacgcttaggagggtcagtgcctcatctgagaactgcattgtaaag 4947  
Sbjct: 5982 gattgccacgcttaggagggtcagtgcctcatctgagaactgcattgtaaag 5923

Query: 4948 ccaggttccaaagtcaatctgttctgtatccaggcttcagctggtcgggaaccctgtg 5007  
|||||||  
Sbjct: 5922 ccaggttccaaagtcaatctgttctgtatccaggcttcagctggtcgggaaccctgtg 5863

Query: 5008 cagtaactgtctgaatcaaggacagtggacacaaccacttcctcactgtgaacg 5060  
|||||||  
Sbjct: 5862 cagtaactgtctgaatcaaggacagtggacacaaccacttcctcactgtgaacg 5810

Score = 329 bits (166), Expect = 2e-86  
Identities = 166/166 (100%)  
Strand = Plus / Minus

Query: 2599 ggaccagggtggctgggtgcagctaataaggctggattactcttacgatgacttcctggac 2658  
|||||||  
Sbjct: 43799 ggaccagggtggctgggtgcagctaataaggctggattactcttacgatgacttcctggac 43740

Query: 2659 actgtgcaagaaacagccacaagcatcggaatgccaagtccctcacggattaaaagaagt 2718  
|||||||  
Sbjct: 43739 actgtgcaagaaacagccacaagcatcggaatgccaagtccctcacggattaaaagaagt 43680

Query: 2719 gccccattatctgactataaaattaagttaatttttaacatcacag 2764  
|||||||  
Sbjct: 43679 gccccattatctgactataaaattaagttaatttttaacatcacag 43634

Score = 329 bits (166), Expect = 2e-86  
Identities = 166/166 (100%)  
Strand = Plus / Minus

Query: 3321 agttccttgtccagaaggaaaattctcgcttctgggttaatgccctgtcacccatgtcc 3380  
|||||||  
Sbjct: 30590 agttccttgtccagaaggaaaattctcgcttctgggttaatgccctgtcacccatgtcc 30531

Query: 3381 tcgtgactattaccaacctaatacgaggaaaggccttctgcctggcctgtccctttatgg 3440  
|||||||  
Sbjct: 30530 tcgtgactattaccaacctaatacgaggaaaggccttctgcctggcctgtccctttatgg 30471

Query: 3441 aactaccccattcgctggttccagatccatcacagaatgttcaagt 3486  
|||||||  
Sbjct: 30470 aactaccccattcgctggttccagatccatcacagaatgttcaagt 30425

Score = 325 bits (164), Expect = 3e-85  
Identities = 164/164 (100%)  
Strand = Plus / Minus

Query: 3159 agctcagtgtaaaacaaggcacctactcatacagtgacttggagacttgtgaatcggtcc 3218  
|||||||  
Sbjct: 37503 agctcagtgtaaaacaaggcacctactcatacagtgacttggagacttgtgaatcggtcc 37444

Query: 3219 actgggcacttatcagccaaaattgggtccggagctgcctctcggtccagaaaacac 3278  
|||||||  
Sbjct: 37443 actgggcacttatcagccaaaattgggtccggagctgcctctcggtccagaaaacac 37384

Query: 3279 ctcaactgtgaaaagaggagccgtgaacattctgtcatgtggag 3322  
|||||||  
Sbjct: 37383 ctcaactgtgaaaagaggagccgtgaacattctgtcatgtggag 37340

Score = 325 bits (164), Expect = 3e-85  
Identities = 164/164 (100%)  
Strand = Plus / Minus

Query: 960 cacagcttgcacatcgggacataaaacctgaaggctaccaggagatcagcagttg 1019  
|||||||  
Sbjct: 85586 cacagcttgcacatcgggacataaaacctgaaggctaccaggagatcagcagttg 85527

Query: 1020 cattccatgtcctgatgaaaatcacacacttcacaccttggaaagcacatcccgtaaagactg 1079  
|||||||  
Sbjct: 85526 cattccatgtcctgatgaaaatcacacacttcacaccttggaaagcacatcccgtaaagactg 85467

Query: 1080 tgtctgcagagaggatacagggcatctggccagacctgtgaac 1123  
|||||||  
Sbjct: 85466 tgtctgcagagaggatacagggcatctggccagacctgtgaac 85423

Score = 323 bits (163), Expect = 1e-84  
Identities = 163/163 (100%)  
Strand = Plus / Minus

Query: 2998 gtcaattgccttggAACCTATTATAATCTGGAAACATTCACCTGTGAAAGCTGCCGG 3057  
|||||||  
Sbjct: 40577 gtcaattgccttggAACCTATTATAATCTGGAAACATTCACCTGTGAAAGCTGCCGG 40518

Query: 3058 atcggatcctatcaagatgaagaaggcaacttggatgtcaagcttgcctctggatg 3117  
|||||||  
Sbjct: 40517 atcggatcctatcaagatgaagaaggcaacttggatgtcaagcttgcctctggatg 40458

Query: 3118 tacacggaatatccattcaagaaacatctctgattgtaaag 3160  
Sbjct: 40457 tacacggaatatccattcaagaaacatctctgattgtaaag 40415

Score = 315 bits (159), Expect = 3e-82  
Identities = 162/163 (99%)  
Strand = Plus / Minus

Query: 4099 ttcagatgcctgtgtcagctggctcacaggatcacactgtgaattgaacatcaatgaa 4158  
Sbjct: 18537 ttcagatgcctgtgtcagctggctcacaggatcacactgtgaattgaacatcaatgaa 18478

Query: 4159 tgtcagtctaattccatgttagaaatcaggccacctgtgtggatgaattaaattcatacagt 4218  
Sbjct: 18477 tgtcagtctaattccatgttagaaatcaggccacctgtgtggatgaattaaattcatacagt 18418

Query: 4219 tgtaaatgtcagccaggatttcaggccaaagggtgtgaaacag 4261  
Sbjct: 18417 tgtaaatgtcagccaggatttcaggccaaagggtgtgaaacag 18375

Score = 272 bits (137), Expect = 4e-69  
Identities = 137/137 (100%)  
Strand = Plus / Minus

Query: 2036 caggggctgaattggtcattaccagaagtcatacacaaggagacctttccctcaagggg 2095  
Sbjct: 53970 caggggctgaattggtcattaccagaagtcatacacaaggagacctttccctcaagggg 53911

Query: 2096 agactatagtacagtatacagccactgaccctcaggcaataacaggacatgtgatatcc 2155  
Sbjct: 53910 agactatagtacagtatacagccactgaccctcaggcaataacaggacatgtgatatcc 53851

Query: 2156 atattgtcataaaaggt 2172  
Sbjct: 53850 atattgtcataaaaggt 53834

Score = 262 bits (132), Expect = 4e-66  
Identities = 132/132 (100%)  
Strand = Plus / Minus

Query: 1799 aggtgtcagtccacggtcatccagcttccacccaccttacccatggagatg 1858  
Sbjct: 61256 aggtgtcagtccacggtcatccagcttccacccaccttacccatggagatg 61197

Query: 1859 ttgctatcgatacggcaactgacctatccggcaaccaggccagctgcatttccata 1918  
|||||||  
Sbjct: 61196 ttgctatcgatacggcaactgacctatccggcaaccaggccagctgcatttccata 61137

Query: 1919 tcaaggttattg 1930  
|||||||  
Sbjct: 61136 tcaaggttattg 61125

Score = 254 bits (128), Expect = 1e-63  
Identities = 128/128 (100%)  
Strand = Plus / Minus

Query: 4639 ggtggtggtgcgttagttctggggcaagagcaagacaaaaaaggagagggattcagccca 4698  
|||||||  
Sbjct: 7980 ggtggtggtgcgttagttctggggcaagagcaagacaaaaaaggagagggattcagccca 7921

Query: 4699 gctgagtctttgtggctccataagccagctcaacctctggactatgtcctgtctcca 4758  
|||||||  
Sbjct: 7920 gctgagtctttgtggctccataagccagctcaacctctggactatgtcctgtctcca 7861

Query: 4759 cagcaggt 4766  
|||||||  
Sbjct: 7860 cagcaggt 7853

Score = 252 bits (127), Expect = 4e-63  
Identities = 127/127 (100%)  
Strand = Plus / Minus

Query: 4762 caggtgaagtcaactggctacccctgcccagaggaactcagtaaaggaaacgtgttagca 4821  
|||||||  
Sbjct: 6842 caggtgaagtcaactggctacccctgcccagaggaactcagtaaaggaaacgtgttagca 6783

Query: 4822 tggcctgatttcttgtcaggaattgtggggaaagtgaagatcgattctaagagcatattt 4881  
|||||||  
Sbjct: 6782 tggcctgatttcttgtcaggaattgtggggaaagtgaagatcgattctaagagcatattt 6723

Query: 4882 tgttctg 4888  
|||||||  
Sbjct: 6722 tgttctg 6716

Score = 246 bits (124), Expect = 2e-61  
Identities = 124/124 (100%)  
Strand = Plus / Minus

Query: 2366 aaaaacgtttgcaaaccacgggttcaagtccctttagatgttctacaaaggcagtcgtt 2425  
|||||  
Sbjct: 51231 aaaaacgtttgcaaaccacgggttcaagtccctttagatgttctacaaaggcagtcgtt 51172

Query: 2426 gtgatgacacagatctgatgaagaagtttctgaaggcatttgagacgaccctggaaaaa 2485  
|||||  
Sbjct: 51171 gtgatgacacagatctgatgaagaagtttctgaaggcatttgagacgaccctggaaaaa 51112

Query: 2486 tggt 2489  
|||  
Sbjct: 51111 tggt 51108

Score = 244 bits (123), Expect = 1e-60  
Identities = 123/123 (100%)  
Strand = Plus / Minus

Query: 1680 agacgtggaggctcctcaaataactgtcctaaggacatagaggctaagactctggaaca 1739  
|||||  
Sbjct: 68410 agacgtggaggctcctcaaataactgtcctaaggacatagaggctaagactctggaaca 68351

Query: 1740 gcaagattctgccaatgttacctggcagattccaaacagctaaagacaactctggtaaaaa 1799  
|||||  
Sbjct: 68350 gcaagattctgccaatgttacctggcagattccaaacagctaaagacaactctggtaaaaa 68291

Query: 1800 ggt 1802  
|||  
Sbjct: 68290 ggt 68288

Score = 240 bits (121), Expect = 2e-59  
Identities = 121/121 (100%)  
Strand = Plus / Minus

Query: 5233 gatgtcgatgagtgtcagttggatcagattgttagtgagcatgcttctgcctgaacgta 5292  
|||||  
Sbjct: 3510 gatgtcgatgagtgtcagttggatcagattgttagtgagcatgcttctgcctgaacgta 3451

Query: 5293 gatggatcctacatatgttcatgtgtccaccgtacacaggagatggaaaaactgtgca 5352  
|||||  
Sbjct: 3450 gatggatcctacatatgttcatgtgtccaccgtacacaggagatggaaaaactgtgca 3391

Query: 5353 g 5353  
|  
Sbjct: 3390 g 3390

Score = 234 bits (118), Expect = 9e-58  
Identities = 118/118 (100%)  
Strand = Plus / Minus

Query: 3672 aggcttaaagtgtgaaacagacatcgatgagtgcagccactgcctgcctaacaatgg 3731  
|||||||  
Sbjct: 27180 aggcttaaagtgtgaaacagacatcgatgagtgcagccactgcctgcctaacaatgg 27121

Query: 3732 agtttgtaaagacctagttgggaattcatttgtgagtgccatcaggttacacaggt 3789  
|||||||  
Sbjct: 27120 agtttgtaaagacctagttgggaattcatttgtgagtgccatcaggttacacaggt 27063

Score = 234 bits (118), Expect = 9e-58  
Identities = 118/118 (100%)  
Strand = Plus / Minus

Query: 3785 caggtcagcggtgtgaagaaaatataaatgagttagtccagtccttggtaataaag 3844  
|||||||  
Sbjct: 22880 caggtcagcggtgtgaagaaaatataaatgagttagtccagtccttggtaataaag 22821

Query: 3845 gaatctgtgtttaggtgtggctatcgatgcacatgtgtgaaaggattttagg 3902  
|||||||  
Sbjct: 22820 gaatctgtgtttaggtgtggctatcgatgcacatgtgtgaaaggattttagg 22763

Score = 226 bits (114), Expect = 2e-55  
Identities = 114/114 (100%)  
Strand = Plus / Minus

Query: 2487 ggtcccatcattttgttagttagtgcagaggacattgactgcagactggaggagaacctgac 2546  
|||||||  
Sbjct: 47791 ggtcccatcattttgttagttagtgcagaggacattgactgcagactggaggagaacctgac 47732

Query: 2547 caaaaaatattgcctagaatataattatgactatgaaaatggcttgcattgg 2600  
|||||||  
Sbjct: 47731 caaaaaatattgcctagaatataattatgactatgaaaatggcttgcattgg 47678

Score = 218 bits (110), Expect = 6e-53  
Identities = 110/110 (100%)  
Strand = Plus / Minus

Query: 1930 gatgcagaaccacctgtcatagactggtcagatctccaccccccgtccaggctcggag 1989  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 55169 gatgcagaaccacctgtcatagactggtcagatctccaccccccgtccaggctcggag 55110

Query: 1990 aaggtacatgccgcaagctggatgaggcctcagttctcagacaactcagg 2039  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 55109 aaggtacatgccgcaagctggatgaggcctcagttctcagacaactcagg 55060

Score = 198 bits (100), Expect = 5e-47  
Identities = 100/100 (100%)  
Strand = Plus / Minus

Query: 3575 aggtttccatgaatgctttaacccttgccacaatagtggAACCTGCCAGCAACTTG 3634  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 28829 aggtttccatgaatgctttaacccttgccacaatagtggAACCTGCCAGCAACTTG 28770

Query: 3635 ggcgtggttatgttgcctgtccacttggatatacagg 3674  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 28769 ggcgtggttatgttgcctgtccacttggatatacagg 28730

Score = 184 bits (93), Expect = 8e-43  
Identities = 93/93 (100%)  
Strand = Plus / Minus

Query: 3485 gtttagttcaacttctcagcggcagaggaaagtgtggccccctgcctctctggac 3544  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 30037 gtttagttcaacttctcagcggcagaggaaagtgtggccccctgcctctctggac 29978

Query: 3545 atattaaaaagaggcatgaaatcagcagtcagg 3577  
||| ||| ||| ||| ||| ||| |||  
Sbjct: 29977 atattaaaaagaggcatgaaatcagcagtcagg 29945

Score = 180 bits (91), Expect = 1e-41  
Identities = 94/95 (98%)  
Strand = Plus / Minus

Query: 5523 ttgttaaagctgttcatgtggtaaacggctattccagaaaatggttcattgaggagtt 5582  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 1487 ttgttaaagctgttcatgtggtaaacggctattccagaaaatggttcattgaggagtt 1428

Query: 5583 agcatttactttggcagcaaagtgacatataagg 5617

|||||||

Sbjct: 1427 agcatttactttggcagcaaagtgacatataagg 1393

**Query= SEQ ID NO:5  
(5529 letters)**

Sequences producing significant alignments:	Score (bits)	E Value
AL592463.10.1.96779	1053	0.0
AL354982.12.1.119077	470	e-129
AL158158.14.1.194835	347	5e-92

>AL592463.10.1.96779  
Length = 96779

Score = 1053 bits (531), Expect = 0.0  
Identities = 531/531 (100%)  
Strand = Plus / Minus

```
Query: 1      atgtggcctcgccctggctttgtgctgggtctggcgctcggtcgacc 60
          ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| |||||
Sbjct: 33941  atgtggcctcgccctggctttgtgctgggtctggcgctcggtcgacc 33882
```

Query: 121 ggggccccccggagtatcccccgcgccgcggctccgtggcgacgaaggcggcgaaaa 180  
|||||||  
Sbjct: 33821 qqqqccccccqggagtatcccccgcgccgcggctccgtggcgacgaaggcggcgaaaa 33762

Query: 181 gtggagccgtggccaggcgttccggcgacgcgtgcggctgctgcggagctcagcgag 240  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 33761 gtggagccgtggccaggcgttccggcgacgcgtacaaactactacaaaaactcaqcgag 33702

Query: 241 cgcctggagttgttcttgtggatgattcgtcagcgtggcgaagtcaacttccgc 300  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 33701 cgcctggagttgttcttgtggatgattcgtcagcgtggcgaagtcaacttccgc 33642

Query: 301 agcgagctcatgttgcgtccgcaagctgtgtccgacttccccgtggtgccccacggccacg 360  
||||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 33641 agcgagctcatgttgcgtccgcaagctgtgtccgacttccccatggtccccacggccacg 33582

Query: 361 cgcgtggccatcgtagccttcgtccaagaactacgtgggccgcgtcattacatc 420  
||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 33581 cgcgtggccatcgtagccttcgtccaagaactacgtgggccgcgtcattacatc 33522

Query: 421 tccacccggcgcgccgcggcagcacaagtgcgcgctgtcccaagagatccctgcatt 480  
Sbjct: 33521 tccacccggcgcgccgcggcagcacaagtgcgcgctgtcccaagagatccctgcatt 33462

```
Query: 481  tcctaccgaggtggcggcacctacaccaaggcgccctccagcaagccgcg 531
         ||||||| | | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 33461 tcctaccgaggtggcggcacctacaccaaggcgccctccagcaagccgcg 33411
```

Score = 509 bits (257), Expect = e-141  
Identities = 257/257 (100%)  
Strand = Plus / Minus

```
Query: 531  gcaaattttcttcatgctagagaaaactcaacaaaagtttatttctcatcactgatgg 590
         ||||||| | | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 4503 gcaaattttcttcatgctagagaaaactcaacaaaagtttatttctcatcactgatgg 4444
```

```
Query: 591  atattccaatggggagaccctagaccaattgcagcgtcactgcgagattcaggagtgg 650
         ||||||| | | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 4443 atattccaatggggagaccctagaccaattgcagcgtcactgcgagattcaggagtgg 4384
```

```
Query: 651  gatcttcactttggcatatggcaaggaaacattcgagagctgaatgacatggcttccac 710
         ||||||| | | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 4383 gatcttcactttggcatatggcaaggaaacattcgagagctgaatgacatggcttccac 4324
```

```
Query: 711  cccaaaggaggagcactgttacctgctacacagtttgaagaattttaggcatttcg 770
         ||||||| | | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 4323 cccaaaggaggagcactgttacctgctacacagtttgaagaattttaggcatttcg 4264
```

```
Query: 771  ccgggcattgcatgaag 787
         ||||||| | | | | | | |
Sbjct: 4263 ccgggcattgcatgaag 4247
```

Score = 355 bits (179), Expect = 2e-94  
Identities = 179/179 (100%)  
Strand = Plus / Minus

```
Query: 786 agatctacttctggagtttattcaagatgatatggccactgctcatatcttgtga 845
         ||||||| | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 691 agatctacttctggagtttattcaagatgatatggccactgctcatatcttgtga 632
```

```
Query: 846 tgaaggcaaggactgtgtgaccgaatggaaagctgcaaattgtggacacacacaggcca 905
         ||||||| | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 631 tgaaggcaaggactgtgtgaccgaatggaaagctgcaaattgtggacacacacaggcca 572
```

```
Query: 906 tttttagtgcattgtgaaaagggttattacggaaaggctgcgttatgaatgcacag 964
         ||||||| | | | | | | | | | | | | | | | | | | | | | | | |
Sbjct: 571 tttttagtgcattgtgaaaagggttattacggaaaggctgcgttatgaatgcacag 513
```

>AL354982.12.1.119077  
Length = 119077

Score = 470 bits (237), Expect = e-129  
Identities = 237/237 (100%)  
Strand = Plus / Minus

Query: 2762 cagctagtgtgccattaccgatgaaagaaaatgatacccttgaatggaaaatcagcaac 2821  
Sbjct: 43075 cagctagtgtgccattaccgatgaaagaaaatgatacccttgaatggaaaatcagcaac 43016

Query: 2822 gactccttcagacattggaaactatcacaataaactgaaaaggactctcaacaaagacc 2881  
Sbjct: 43015 gactccttcagacattggaaactatcacaataaactgaaaaggactctcaacaaagacc 42956

Query: 2882 ccatgtattccttcagcttgcattcagaataacttatagccgacagcaattcattagaaa 2941  
Sbjct: 42955 ccatgtattccttcagcttgcattcagaataacttatagccgacagcaattcattagaaa 42896

Query: 2942 caaaaaaggctcccccttgcagaccaggctcagtgcgtgagagggcgatgtgtg 2998  
Sbjct: 42895 caaaaaaggctcccccttgcagaccaggctcagtgcgtgagagggcgatgtgtg 42839

Score = 406 bits (205), Expect = e-110  
Identities = 205/205 (100%)  
Strand = Plus / Minus

Query: 4259 cagaacagtctacaggcttaacctggatttgaagttctggcatctatggatatgtca 4318  
Sbjct: 17516 cagaacagtctacaggcttaacctggatttgaagttctggcatctatggatatgtca 17457

Query: 4319 tgcttagatggcatgtcccattctccatgctctaaccgtaccttctggatgaaatcct 4378  
Sbjct: 17456 tgcttagatggcatgtcccattctccatgctctaaccgtaccttctggatgaaatcct 17397

Query: 4379 ctgacgacatgaactatggaacaccaatctcctatgcagttgataacggcagcgacaata 4438  
Sbjct: 17396 ctgacgacatgaactatggaacaccaatctcctatgcagttgataacggcagcgacaata 17337

Query: 4439 ccttgctcctgactgattataacgg 4463  
Sbjct: 17336 ccttgctcctgactgattataacgg 17312

Score = 404 bits (204), Expect = e-109  
Identities = 204/204 (100%)  
Strand = Plus / Minus

Query: 3900 aggcctgcattgtgaaacagaagtcaatgaatgccaggtaaataatgc 3959  
|||||||  
Sbjct: 21737 aggcctgcattgtgaaacagaagtcaatgaatgccaggtaaataatgc 21678

Query: 3960 agtctgtgaagaccagggtggggattcttgtgcaaatgccacctggattttgggtac 4019  
|||||||  
Sbjct: 21677 agtctgtgaagaccagggtggggattcttgtgcaaatgccacctggattttgggtac 21618

Query: 4020 ccgatgtggaaagaacgtcgatgagtgtctcagtcagccatgcaaaaatggagctacctg 4079  
|||||||  
Sbjct: 21617 ccgatgtggaaagaacgtcgatgagtgtctcagtcagccatgcaaaaatggagctacctg 21558

Query: 4080 taaagacggtgccaatagcttcag 4103  
|||||||  
Sbjct: 21557 taaagacggtgccaatagcttcag 21534

Score = 394 bits (199), Expect = e-106  
Identities = 199/199 (100%)  
Strand = Plus / Minus

Query: 1483 gagcgccactgttccaccttcagatgccc aaagatgtcatcatatcccccaactgt 1542  
|||||||  
Sbjct: 70714 gagcgccactgttccaccttcagatgccc aaagatgtcatcatatcccccaactgt 70655

Query: 1543 ggcaaggcagccagccaaattgggacgatctgctatgttaagttccggcaagggttcatt 1602  
|||||||  
Sbjct: 70654 ggcaaggcagccagccaaattgggacgatctgctatgttaagttccggcaagggttcatt 70595

Query: 1603 ttatctggagtcaaagaaatgctgagatgtaccacttctggaaaatggaatgtcggagtt 1662  
|||||||  
Sbjct: 70594 ttatctggagtcaaagaaatgctgagatgtaccacttctggaaaatggaatgtcggagtt 70535

Query: 1663 caggcagctgtgttaaag 1681  
|||||||  
Sbjct: 70534 caggcagctgtgttaaag 70516

Score = 391 bits (197), Expect = e-105  
Identities = 197/197 (100%)  
Strand = Plus / Minus

Query: 2169 agttccctgtgaaattcattcacacctgtaaatgggatttatgcactccaga 2228  
|||||||  
Sbjct: 52913 agttccctgtgaaattcattcacacctgtaaatgggatttatgcactccaga 52854

Query: 2229 taatactggagtcaactgtacattaacttgcggaggctatgattcacagaaggc 2288  
|||||||  
Sbjct: 52853 taatactggagtcaactgtacattaacttgcggaggctatgattcacagaaggc 52794

Query: 2289 tactgacaagtattattgtgcattgaagatggcgcttgaaaccaacatataccactga 2348  
|||||||  
Sbjct: 52793 tactgacaagtattattgtgcattgaagatggcgcttgaaaccaacatataccactga 52734

Query: 2349 atggccagactgtgcc 2365  
|||||||  
Sbjct: 52733 atggccagactgtgcc 52717

Score = 361 bits (182), Expect = 3e-96  
Identities = 182/182 (100%)  
Strand = Plus / Minus

Query: 1302 agtaagaacatgtcctcatctccgcagccaaacatggccacatcagctgttctacaag 1361  
|||||||  
Sbjct: 74694 agtaagaacatgtcctcatctccgcagccaaacatggccacatcagctgttctacaag 74635

Query: 1362 ggaaatgttatataagacaacatgttgggtgcctgtatgaagggtacagactagaagg 1421  
|||||||  
Sbjct: 74634 ggaaatgttatataagacaacatgttgggtgcctgtatgaagggtacagactagaagg 74575

Query: 1422 cagtgataagcttacttgtcaaggaaacagccagtggatggccagaaccccggtgt 1481  
|||||||  
Sbjct: 74574 cagtgataagcttacttgtcaaggaaacagccagtggatggccagaaccccggtgt 74515

Query: 1482 gg 1483  
||  
Sbjct: 74514 gg 74513

Score = 357 bits (180), Expect = 5e-95  
Identities = 180/180 (100%)  
Strand = Plus / Minus

Query: 1124 ttgtccactgccctgccctgaagcctcccggaaaatggttactttatccaaaacacttgca 1183  
||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 84580 ttgtccactgccctgccctgaagcctcccggaaaatggttactttatccaaaacacttgca 84521

Query: 1184 acaaccaccttcaatgcagcctgtgggtccgatgtcaccctggatttgcattttgtggaa 1243  
||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 84520 acaaccaccttcaatgcagcctgtgggtccgatgtcaccctggatttgcattttgtggaa 84461

Query: 1244 gcagcatcatcttatgtctacccaatggttgtggccgggttcagagagctactgcagag 1303  
||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 84460 gcagcatcatcttatgtctacccaatggttgtggccgggttcagagagctactgcagag 84401

Score = 355 bits (179), Expect = 2e-94  
Identities = 179/179 (100%)  
Strand = Plus / Minus

Query: 4463 gctgggttcttatgtgaatggcaggaaaaagataacaaactgtccctcggtgaatgatg 4522  
||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 15196 gctgggttcttatgtgaatggcaggaaaaagataacaaactgtccctcggtgaatgatg 15137

Query: 4523 gcagatggcatcatattgcaatcacttggacaagtgcacatggcatctggaaagtctata 4582  
||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 15136 gcagatggcatcatattgcaatcacttggacaagtgcacatggcatctggaaagtctata 15077

Query: 4583 tcgatggaaattatctgacgggtggctggcctctgttggttgccatacctgg 4641  
||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 15076 tcgatggaaattatctgacgggtggctggcctctgttggttgccatacctgg 15018

Score = 355 bits (179), Expect = 2e-94  
Identities = 179/179 (100%)  
Strand = Plus / Minus

Query: 786 agatctacttctggagtttattcaagatgatatggccactgctcatatcttgtga 845  
||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 117768 agatctacttctggagtttattcaagatgatatggccactgctcatatcttgtga 117709

Query: 846 tgaaggcaaggactgctgtgaccgaatggaaagctgcaaatgtggacacacacaggcca 905  
||||| ||||| ||||| ||||| ||||| ||||| |||||  
Sbjct: 117708 tgaaggcaaggactgctgtgaccgaatggaaagctgcaaatgtggacacacacaggcca 117649

Score = 345 bits (174), Expect = 2e-91  
Identities = 174/174 (100%)  
Strand = Plus / Minus

Query: 5060 gcatttagctgtgggggccaccccttggagaatggcttcattcagccgatgacttct 5119  
Sbjct: 4110 gcatttagctgtgggggccaccccttggagaatggcttcattcagccgatgacttct 4051

Query: 5120 atgctggcagcacagtaacctaccagtgcacaaatggctactatctattgggtgactcaa 5179  
Sbjct: 4050 atqctqacacqacagtaacctaccagtgcacaaatggctactatctattgggtgactcaa 3991

Query: 5180 ggatgttctgtacagataatgggagctggAACGGCGTTcaccatcctgccttg 5233  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 3990 ggatgttctgtacagataatqqqAGCTTqggAACGGCGTTcaccatcctgccttg 3937

Score = 343 bits (173), Expect = 7e-91  
Identities = 173/173 (100%)  
Strand = Plus / Minus

Query: 4888 gattgcccacgcttaggagggtcagtgcctcatctgagaactgcatctgaagattaaag 4947  
|||  
Sbjct: 5982 gattgcccacgcttaggagggtcagtgcctcatctgagaactgcatctgaagattaaag 5923

Query: 4948 ccaggttccaaagtcaatctgttctgtatccaggcttccagctggcgaaaccctgtg 5007  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 5922 ccaggttccaaagtcaatctgttctgtatccaggcttccagctggcgaaaccctgtg 5863

Query: 5008 cagtactgtctaatcaaggacagtgacacaaccacttcctcactgtgaacg 5060  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 5862 cagtactgtctaatcaaggacagtgacacaaccacttcctcactgtgaacg 5810

Score = 339 bits (171), Expect = 1e-89  
Identities = 174/175 (99%)  
Strand = Plus / Minus

Query: 5352 agaacctataaaatgtaaaaaggctccagggaaaatccggaaaatggccactcctcagggtgagat 5411  
Sbjct: 1927 agaacctataaaatgtaaaaaggctccagggaaaatccggaaaatggccactcctcagggtgagat 1868

Query: 5412 ttatacagtaggtgccgcagtcacatttcgatcgaggataccaggatgggatgggatg 5471  
||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Sbjct: 1867 ttatacagtaggtgccgaagtcacatttcgatcgaggataccaggatgggatgggatg 1808

Query: 5472 aaccaaaatcacatgttggagtctggagaatggaatcatctaataccatattgt 5526  
||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Sbjct: 1807 aaccaaaatcacatgttggagtctggagaatggaatcatctaataccatattgt 1753

Score = 329 bits (166), Expect = 1e-86  
Identities = 166/166 (100%)  
Strand = Plus / Minus

Query: 3321 agttccttgcagaaggaaaattctcgcggtctgggttaatgcgcgtcaccatgtcc 3380  
||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Sbjct: 30590 agttccttgcagaaggaaaattctcgcggtctgggttaatgcgcgtcaccatgtcc 30531

Query: 3381 tcgtgactattaccaacctaattgcaggaaaggccttgcgcgtccgtccctttatgg 3440  
||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Sbjct: 30530 tcgtgactattaccaacctaattgcaggaaaggccttgcgcgtccgtccctttatgg 30471

Query: 3441 aactaccccattcgctgggtccagatccatcacagaatgttcaagt 3486  
||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Sbjct: 30470 aactaccccattcgctgggtccagatccatcacagaatgttcaagt 30425

Score = 329 bits (166), Expect = 1e-86  
Identities = 166/166 (100%)  
Strand = Plus / Minus

Query: 2599 ggaccaggtggctgggtgcagctaataaggctggattactcttacgtacttcctggac 2658  
||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Sbjct: 43799 ggaccaggtggctgggtgcagctaataaggctggattactcttacgtacttcctggac 43740

Query: 2659 actgtgcaagaaacagccacaaggcatcggaatgccaagtccctcacggattaaaagaagt 2718  
||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Sbjct: 43739 actgtgcaagaaacagccacaaggcatcggaatgccaagtccctcacggattaaaagaagt 43680

Query: 2719 gccccattatctgactataaaattaagttaattttaacatcacag 2764  
||| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Sbjct: 43679 gccccattatctgactataaaattaagttaattttaacatcacag 43634

Score = 325 bits (164), Expect = 2e-85  
Identities = 164/164 (100%)  
Strand = Plus / Minus

Query: 960 cacagcttgcacatcgggacatacaaaccctgaaggctcaccaggaggaatcagcagttg 1019  
|||||||  
Sbjct: 85586 cacagcttgcacatcgggacatacaaaccctgaaggctcaccaggaggaatcagcagttg 85527

Query: 1020 cattccatgtcctgatgaaaatcacacacttccaccttggaaagcacatcccctgaagactg 1079  
|||||||  
Sbjct: 85526 cattccatgtcctgatgaaaatcacacacttccaccttggaaagcacatcccctgaagactg 85467

Query: 1080 tgtctgcagagagggatacagggcatctggccagacacctgtgaac 1123  
|||||||  
Sbjct: 85466 tgtctgcagagagggatacagggcatctggccagacacctgtgaac 85423

Score = 325 bits (164), Expect = 2e-85  
Identities = 164/164 (100%)  
Strand = Plus / Minus

Query: 3159 agtcagtgtaaaacaaggcacctactcatacagtggacttggagacttgtgaatcgtgtcc 3218  
|||||||  
Sbjct: 37503 agtcagtgtaaaacaaggcacctactcatacagtggacttggagacttgtgaatcgtgtcc 37444

Query: 3219 actgggcacttatcagccaaaattgggtccggagctgcctctcggtccagaaaacac 3278  
|||||||  
Sbjct: 37443 actgggcacttatcagccaaaattgggtccggagctgcctctcggtccagaaaacac 37384

Query: 3279 ctcaactgtaaaaagaggagccgtgaacattctgtcatgtggag 3322  
|||||||  
Sbjct: 37383 ctcaactgtaaaaagaggagccgtgaacattctgtcatgtggag 37340

Score = 323 bits (163), Expect = 7e-85  
Identities = 163/163 (100%)  
Strand = Plus / Minus

Query: 2998 gtcaattgcccttggAACCTTATAATCTGGAAACATTCCACCTGTGAAAGCTGCCGG 3057  
|||||||  
Sbjct: 40577 gtcaattgcccttggAACCTTATAATCTGGAAACATTCCACCTGTGAAAGCTGCCGG 40518

Query: 3058 atcgatcctatcaagatgaagaaggcaacttggatgtcaagctttggccctgtggatg 3117  
|||||||  
Sbjct: 40517 atcgatcctatcaagatgaagaaggcaacttggatgtcaagctttggccctgtggatg 40458

Query: 3118 tacacggaatatccattcaagaaacatctctgattgtaaag 3160  
||| ||| ||| ||| ||| |||  
Sbjct: 40457 tacacggaatatccattcaagaaacatctctgattgtaaag 40415

Score = 315 bits (159), Expect = 2e-82  
Identities = 162/163 (99%)  
Strand = Plus / Minus

Query: 4099 ttcatgcctgtgcagctggctcacaggatcacactgtgaattgaacatcaatgaa 4158  
||| ||| ||| ||| ||| |||  
Sbjct: 18537 ttcatgcctgtgcagctggctcacaggatcacactgtgaattgaacatcaatgaa 18478

Query: 4159 tgtcagtctaattccatgttagaaatcaggccacctgtgtggatgaattaaattcatacagt 4218  
||| ||| ||| ||| ||| |||  
Sbjct: 18477 tgtcagtctaattccatgttagaaatcaggccacctgtgtggatgaattaaattcatacagt 18418

Query: 4219 tgtaaatgtcagccaggatttcaggccaaagggtgtgaaacag 4261  
||| ||| ||| ||| |||  
Sbjct: 18417 tgtaaatgtcagccaggatttcaggccaaagggtgtgaaacag 18375

Score = 272 bits (137), Expect = 2e-69  
Identities = 137/137 (100%)  
Strand = Plus / Minus

Query: 2036 caggggctgaatttgtcattaccagaagtcatcacacaaggagacctttccctcaagggg 2095  
||| ||| ||| ||| |||  
Sbjct: 53970 caggggctgaatttgtcattaccagaagtcatcacacaaggagacctttccctcaagggg 53911

Query: 2096 agactatagtacagtatacagccactgaccctcaggcaataacaggacatgtgatatcc 2155  
||| ||| ||| ||| |||  
Sbjct: 53910 agactatagtacagtatacagccactgaccctcaggcaataacaggacatgtgatatcc 53851

Query: 2156 atattgtcataaaaggt 2172  
||| ||| ||| |||  
Sbjct: 53850 atattgtcataaaaggt 53834

Score = 262 bits (132), Expect = 2e-66  
Identities = 132/132 (100%)  
Strand = Plus / Minus

Query: 1799 aggtgtcagtccacgttcatccagcttcaccccaccttaccccaattggagatg 1858  
||| ||| ||| ||| |||  
Sbjct: 61256 aggtgtcagtccacgttcatccagcttcaccccaccttaccccaattggagatg 61197

Query: 1859 ttgctatcgatacacggcaactgaccatatccggcaaccaggccagctgcatttcata 1918  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 61196 ttgctatcgatacacggcaactgaccatatccggcaaccaggccagctgcatttcata 61137

Query: 1919 tcaaggttattg 1930  
||| ||| ||| |||  
Sbjct: 61136 tcaaggttattg 61125

Score = 254 bits (128), Expect = 5e-64  
Identities = 128/128 (100%)  
Strand = Plus / Minus

Query: 4639 ggtggtggtgcgttagttctggggcaagagcaagacaaaaaaggagaggattcagccca 4698  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 7980 ggtggtggtgcgttagttctggggcaagagcaagacaaaaaaggagaggattcagccca 7921

Query: 4699 gctgagtctttgtggctccataagccagctcaacctctggactatgtcctgtctcca 4758  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 7920 gctgagtctttgtggctccataagccagctcaacctctggactatgtcctgtctcca 7861

Query: 4759 cagcaggt 4766  
||| ||| |||  
Sbjct: 7860 cagcaggt 7853

Score = 252 bits (127), Expect = 2e-63  
Identities = 127/127 (100%)  
Strand = Plus / Minus

Query: 4762 caggtgaagtcaactggctacccctgcccagaggaactcagtaaaggaaacgtgttagca 4821  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 6842 caggtgaagtcaactggctacccctgcccagaggaactcagtaaaggaaacgtgttagca 6783

Query: 4822 tggcctgatttcttgtcaggaattgtggggaaagtgaagatcgattctaagagcatattt 4881  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Sbjct: 6782 tggcctgatttcttgtcaggaattgtggggaaagtgaagatcgattctaagagcatattt 6723

Query: 4882 tgttctg 4888  
||| |||  
Sbjct: 6722 tgttctg 6716

Score = 246 bits (124), Expect = 1e-61  
Identities = 124/124 (100%)  
Strand = Plus / Minus

Query: 2366 aaaaacgtttgcaaaccacgggttcaagtccttgagatgttctacaaaggcagtcgtt 2425  
|||||  
Sbjct: 51231 aaaaacgtttgcaaaccacgggttcaagtccttgagatgttctacaaaggcagtcgtt 51172

Query: 2426 gtgatgacacagatctgatgaagaagtttctgaaggcattgagacgaccctggaaaaaa 2485  
|||||  
Sbjct: 51171 gtgatgacacagatctgatgaagaagtttctgaaggcattgagacgaccctggaaaaaa 51112

Query: 2486 tggt 2489  
|||  
Sbjct: 51111 tggt 51108

Score = 244 bits (123), Expect = 5e-61  
Identities = 123/123 (100%)  
Strand = Plus / Minus

Query: 1680 agacgtggaggctcctcaaataactgtcctaaggacatagaggctaagactctggaaca 1739  
|||||  
Sbjct: 68410 agacgtggaggctcctcaaataactgtcctaaggacatagaggctaagactctggaaca 68351

Query: 1740 gcaagattctgccaatgttacctggcagattccaaacagactaaagacaactctggtaaaaa 1799  
|||||  
Sbjct: 68350 gcaagattctgccaatgttacctggcagattccaaacagactaaagacaactctggtaaaaa 68291

Query: 1800 ggt 1802  
|||  
Sbjct: 68290 ggt 68288

Score = 240 bits (121), Expect = 8e-60  
Identities = 121/121 (100%)  
Strand = Plus / Minus

Query: 5233 gatgtcgatgagtgtcagttggatcagattgttagtgagcatgcttgcctgaacgta 5292  
|||||  
Sbjct: 3510 gatgtcgatgagtgtcagttggatcagattgttagtgagcatgcttgcctgaacgta 3451

Query: 5293 gatggatcctacatatgttcatgtgtcccaccgtacacaggagatggaaaaactgtgca 5352  
|||||  
Sbjct: 3450 gatggatcctacatatgttcatgtgtcccaccgtacacaggagatggaaaaactgtgca 3391

Query: 5353 g 5353  
|  
Sbjct: 3390 g 3390

Score = 234 bits (118), Expect = 5e-58  
Identities = 118/118 (100%)  
Strand = Plus / Minus

Query: 3672 aggcttaaagtgtgaaacagacatcgatgagtgcagcccactgcctgcctaacaatgg 3731  
|||||||  
Sbjct: 27180 aggcttaaagtgtgaaacagacatcgatgagtgcagcccactgcctgcctaacaatgg 27121

Query: 3732 agtttgtaaagaccttagttgggaattcatttgagtgccatcaggttacacaggt 3789  
|||||||  
Sbjct: 27120 agtttgtaaagaccttagttgggaattcatttgagtgccatcaggttacacaggt 27063

Score = 234 bits (118), Expect = 5e-58  
Identities = 118/118 (100%)  
Strand = Plus / Minus

Query: 3785 caggtcagcggtgtgaagaaaatataaatgagttagtccagtcctgtttaataaag 3844  
|||||||  
Sbjct: 22880 caggtcagcggtgtgaagaaaatataaatgagttagtccagtcctgtttaataaag 22821

Query: 3845 gaatctgtgttatgggtgtggctatcgatgtgaaaggattttagg 3902  
|||||||  
Sbjct: 22820 gaatctgtgttatgggtgtggctatcgatgtgaaaggattttagg 22763

Score = 226 bits (114), Expect = 1e-55  
Identities = 114/114 (100%)  
Strand = Plus / Minus

Query: 2487 ggtcccatcatttgtatgtgcagaggacattgactgcagactggaggagaacctgac 2546  
|||||||  
Sbjct: 47791 ggtcccatcatttgtatgtgcagaggacattgactgcagactggaggagaacctgac 47732

Query: 2547 caaaaaatattgcctagaatataattatgactatgaaaatggcttcaattgg 2600  
|||||||  
Sbjct: 47731 caaaaaatattgcctagaatataattatgactatgaaaatggcttcaattgg 47678

Score = 218 bits (110), Expect = 3e-53  
Identities = 110/110 (100%)  
Strand = Plus / Minus

Query: 1930 gatgcagaaccacctgtcatagactggtcagatctccacccgtccaggctcggag 1989  
|||||  
Sbjct: 55169 gatgcagaaccacctgtcatagactggtcagatctccacccgtccaggctcggag 55110

Query: 1990 aaggtacatgccgcaagctggatgaggcctcagttctcagacaactcagg 2039  
|||||  
Sbjct: 55109 aaggtacatgccgcaagctggatgaggcctcagttctcagacaactcagg 55060

Score = 198 bits (100), Expect = 3e-47  
Identities = 100/100 (100%)  
Strand = Plus / Minus

Query: 3575 aggtttccatgaatgctttaacccttgccacaatagtggAACCTGCCAGCAACTTG 3634  
|||||  
Sbjct: 28829 aggtttccatgaatgctttaacccttgccacaatagtggAACCTGCCAGCAACTTG 28770

Query: 3635 ggcgtggttatgttgtctctgtccactggatatacagg 3674  
|||||  
Sbjct: 28769 ggcgtggttatgttgtctctgtccactggatatacagg 28730

Score = 184 bits (93), Expect = 4e-43  
Identities = 93/93 (100%)  
Strand = Plus / Minus

Query: 3485 gtttagttcaacttctcagcggcagaggaaagtgtggtccccctgcctctttggac 3544  
|||||  
Sbjct: 30037 gtttagttcaacttctcagcggcagaggaaagtgtggtccccctgcctctttggac 29978

Query: 3545 atattaaaaagaggcatgaaatcagcagtcagg 3577  
|||||  
Sbjct: 29977 atattaaaaagaggcatgaaatcagcagtcagg 29945

>AL158158.14.1.194835  
Length = 194835

Score = 347 bits (175), Expect = 5e-92  
Identities = 175/175 (100%)  
Strand = Plus / Minus

Query: 5352 agaacctataaaatgttaaggctccaggaaatccggaaaatggccactcctcaggtgagat 5411  
Sbjct: 194762 agaacctataaaatgttaaggctccaggaaatccggaaaatggccactcctcaggtgagat 194703

Query: 5412 ttatacagttaggtgccgcagtcacatttcggtcaggaaggataccagttgatggagt 5471  
Sbjct: 194702 ttatacagttaggtgccgcagtcacatttcggtcaggaaggataccagttgatggagt 194643

Query: 5472 aaccaaaatcacatgttggagtctggagaatggaatcatctaataccatattgt 5526  
Sbjct: 194642 aaccaaaatcacatgttggagtctggagaatggaatcatctaataccatattgt 194588



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1: AL592463. Human DNA sequenc...[gi:16555526]

**LOCUS** AL592463 96779 bp DNA linear PRI 30-OCT-2001  
**DEFINITION** Human DNA sequence from clone RP11-410K21 on chromosome 9, complete sequence.  
**ACCESSION** AL592463  
**VERSION** AL592463.10 GI:16555526  
**KEYWORDS** HTG.  
**SOURCE** Homo sapiens (human)  
**ORGANISM** Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
**REFERENCE** 1 (bases 1 to 96779)  
**AUTHORS** Kay, M.  
**TITLE** Direct Submission  
**JOURNAL** Submitted (30-OCT-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk  
**COMMENT** On Oct 31, 2001 this sequence version replaced gi:15131368. During sequence assembly data is compared from overlapping clones. Where differences are found these are annotated as variations together with a note of the overlapping clone name. Note that the variation annotation may not be found in the sequence submission corresponding to the overlapping clone, as we submit sequences with only a small overlap as described above. This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the assembly was confirmed by restriction digest. The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases: Em:, EMBL; Sw:, SWISSPROT; Tr:, TREMBL; Wp:, WORMPEP; Information on the WORMPEP database can be found at [http://www.sanger.ac.uk/Projects/C\\_elegans/wormpep](http://www.sanger.ac.uk/Projects/C_elegans/wormpep) This sequence was generated from part of bacterial clone contigs of human chromosome 9, constructed by the Sanger Centre Chromosome 9 Mapping Group. Further information can be found at <http://www.sanger.ac.uk/HGP/Chr9> RP11-410K21 is from the library RPCI-11.2 constructed by the group of Pieter de Jong. For further details see <http://www.chori.org/bacpac/home.htm>  
**VECTOR:** pBACe3.6  
**IMPORTANT:** This sequence is not the entire insert of clone RP11-410K21 It may be shorter because we sequence overlapping sections only once, except for a short overlap.  
The true left end of clone RP11-410K21 is at 1 in this sequence.  
The true left end of clone RP13-461N9 is at 94780 in this sequence.



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Display		default <input type="button" value="▼"/>	Show: 20 <input type="button" value="▼"/>	Send to	File <input type="button" value="▼"/>	Get Subsequence	Features
<input type="checkbox"/> 1: AL354982. Human DNA sequence...[gi:16214577] <input type="button" value="Links"/>							

LOCUS AL354982 119077 bp DNA linear PRI 16-OCT-2001  
DEFINITION Human DNA sequence from clone RP11-473H13 on chromosome 9, complete sequence.  
ACCESSION AL354982  
VERSION AL354982.12 GI:16214577  
KEYWORDS HTG.  
SOURCE Homo sapiens (human)  
ORGANISM Homo sapiens  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
REFERENCE 1 (bases 1 to 119077)  
AUTHORS Clark,S.  
TITLE Direct Submission  
JOURNAL Submitted (16-OCT-2001) Sanger Centre, Hinxton, Cambridgeshire,  
CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone  
requests: clonerequest@sanger.ac.uk  
COMMENT On Oct 17, 2001 this sequence version replaced gi:15131224.  
During sequence assembly data is compared from overlapping clones.  
Where differences are found these are annotated as variations  
together with a note of the overlapping clone name. Note that the  
variation annotation may not be found in the sequence submission  
corresponding to the overlapping clone, as we submit sequences with  
only a small overlap as described above.  
This sequence was finished as follows unless otherwise noted: all  
regions were either double-stranded or sequenced with an alternate  
chemistry or covered by high quality data (i.e., phred quality >= 30);  
an attempt was made to resolve all sequencing problems, such  
as compressions and repeats; all regions were covered by at least  
one plasmid subclone or more than one M13 subclone; and the  
assembly was confirmed by restriction digest. The following  
abbreviations are used to associate primary accession numbers given  
in the feature table with their source databases: Em:, EMBL; Sw:,  
SWISSPROT; Tr:, TREMBL; Wp:, WORMPEP; Information on the WORMPEP  
database can be found at  
[http://www.sanger.ac.uk/Projects/C\\_elegans/wormpep](http://www.sanger.ac.uk/Projects/C_elegans/wormpep) This sequence  
was generated from part of bacterial clone contigs of human  
chromosome 9, constructed by the Sanger Centre Chromosome 9 Mapping  
Group. Further information can be found at  
<http://www.sanger.ac.uk/HGP/Chr9>  
RP11-473H13 is from the library RPCI-11.2 constructed by the group  
of Pieter de Jong. For further details see  
<http://www.chori.org/bacpac/home.htm>  
VECTOR: pBACe3.6  
IMPORTANT: This sequence is not the entire insert of clone  
RP11-473H13 It may be shorter because we sequence overlapping  
sections only once, except for a short overlap.  
The true left end of clone RP11-410K21 is at 117078 in this  
sequence. The true right end of clone RP11-427L11 is at 2000 in